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EXAMINER	
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/820,863	PARK ET AL.	
	Examiner	Art Unit	
	Luis Roman	2836	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on 31 October 2007.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) 1-20 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) 1-20 is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 10/31/07 has been entered.

Accordingly claims 2-7, 9-10, 12-13, 15-16, & 18-19 have been kept original, claim 1 has been amended, claims 8, 11, 14, 17 & 20 have been previously presented and claim 20 has been cancelled. No new claims were added. It also included remarks/arguments.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1-2, 4, 8-9, 11-12 & 17-20 are rejected under 35 U.S.C. §103(a) as being unpatentable over Johnson et al. (US 6740853) in view of Lue et al. (US 5761023) and Arasawa et al. (US Re. 36810).

Regarding claim 1 Johnson et al. discloses an electrostatic chuck (ESC) (Abstract & Fig. 1A element 102) for a wafer (Col. 1 lines 13-15) comprising: a base on which the wafer is mountable (Fig. 1A element 170<note that the base it's the body of

all the set of pieces mechanically connected as a support where the wafer seats on to be processed>), a first helium gas supply passage formed inside the base, and which emits a helium gas to the edge part of the wafer (Col. 16 lines 16-19 & Fig. 10E); and a second helium gas supply passage provided inside the base and offset from the first helium gas supply passage, and which emits the helium gas to the center part of the wafer (Col. 16 lines 66-67; Col. 17 lines 1-3 & Figs. 1B, 1D elements 205, 215; Figs. 10B-10E elements 215, 360, 420); Johnson discloses gas distribution discs that are located in the base of the electrostatic chuck which distribute gases to two circular different areas of the wafer (center, edge) (Fig. 1A elements 360, 370 & Fig. 2 element 190<circularly divided in two areas of cooling by the two previous discs shortly discloses the sealing properties among parts (Col. 3 lines 20-25) but does neither disclose the sealing elements as ring–type in direct contact and dividing the wafer when the wafer is mounted nor wherein the helium gas is introduced in to the center part of the wafer and edge part of the wafer synchronously.

Lue et al. teaches ring-type sealing member at the top of the base that contact the wafer and divides it when the wafer is mounted (Col. 6 lines 24-35, Col. 9 lines 11-20 & Fig 3 elements 72, 74, Fig. 4 elements 72, 74, 82).

Arasawa et al. teaches a plasma processing apparatus wherein the two gases are supplied at the same time at the two areas (Col. 9 lines 5-10 & Fig. 12 gases 64a-b provided to the wafer thru manifolds 62-63).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the Johnson et al. device with the Lue et al. teachings because these rings minimize leakage of helium gas into the chamber (Lue et al. <Col. 6 lines 34-35>) and in addition also prevents any leakage among the different zones further in view of Arasawa et al. because it provides and apparatus and method capable of making the temperature distribution uniform in the whole area of the substrate to be processed and applying a more uniform and better process to it (Arasawa et al. <Col. 2 lines 3-7>).

Regarding claim 2 Johnson et al. in view of Lue et al. and Arasawa et al. discloses the ESC for a wafer according to claim 1. Johnson et al. further discloses wherein the first helium gas supply passage comprises: a first helium gas inlet provided in a bottom of the base (Fig. 1A-B element 180 & Fig. 1D element 210); a plurality of first helium gas outlets provided in the upper end pad of the base corresponding to the edge part of the wafer (Fig. 4F elements 305B); and a first inner conduit (Fig. 1A element 370) formed branched from the first helium gas inlet, and connected to the plurality of the first helium gas outlets (Col. 16 lines 52-61).

Regarding claim 4 Johnson et al. in view of Lue et al. and Arasawa et al. discloses the ESC for a wafer according to claim 2. Johnson et al. further discloses wherein the second helium gas supply passage comprises: a second helium gas inlet provided in a bottom of the base (Figs. 1A element 180, 1B elements 180, 215 & 1D element 215); a plurality of second helium gas outlets provided in the upper end part of the base corresponding to the center part of the wafer (Fig. 4F elements 305A); and a second inner conduit (Fig. 1A element 360) formed branched from the second helium gas inlet, and connected to the plurality of second helium gas outlets (Col. 16 lines 52-61).

Regarding claim 8 Johnson et al. in view of Lue et al. and Arasawa et al. discloses the ESC for a wafer according to claim 1. Johnson et al. in view of Lue et al. further discloses comprising: a third ring type sealing member provided on the upper end part of the base, and which directly contacts and divides the center part of the wafer into first and second areas when the wafer is mounted (Col. 12 lines 5-9 <multizone>), and a third helium gas supply passage provided inside the base and offset from the second helium gas supply passage (Col. 8 lines 42-45), and which emits the helium gas to the first area of the divided center part of the wafer.

Johnson et al. in view of Lue et al. does not specifically disclose a third ring-type sealing, but teaches about having multizones with different shapes and configurations.

Johnson et al. in view of Lue et al. does not specifically disclose the functioning a third gas inlet but teaches about having it in the center of conduit 180.

Johnson et al. in view of Lue et al. does not specifically disclose the emission of helium gas to the first area (the inner one out of the three areas), but teaches about having multizones with different shapes and configurations.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the Johnson et al. in view of Lue et al. device with the features of having three concentric rings with separated gas inlets for each zone, this provides a better control of the areas to cool by allowing changes in the temperatures or density of the helium gas, even more allows the usage of different gases according to the needs on the different areas of the wafer in process.

Regarding claim 9 Johnson et al. in view of Lue et al. and Arasawa et al. discloses the ESC for a wafer according to claim 8. Johnson et al. in view of Lue et al. discloses wherein the third helium gas supply passage comprises: a helium gas inlet provided in the bottom of the base (Figs. 1A element 180, 1B elements 180, 215 & 1D element 215); a plurality of helium gas outlets provided in the upper end part of the base corresponding to the first area of the divided center part of the wafer (Fig. 4F elements 305A); and an inner conduit formed branched (Col. 16 lines 57-61) from the helium gas inlet and connected to the plurality of the helium gas outlets (Fig. 4F elements 305A).

Johnson et al. in view of Lue et al. does not specifically disclose a third helium gas supply passage, but teaches about having it in the center of conduit 180.
Johnson et al. in view of Lue et al. does not specifically disclose a plurality of helium gas outlets provided in the upper end part of the base corresponding to the first area of the divided center part of the wafer; and an inner conduit formed branched from the helium gas inlet and connected to the plurality of the helium gas outlets but teaches about having multizones with different shapes and configurations.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the Johnson et al. in view of Lue et al. device with the

features of having three helium gas supply passage with separated gas inlets for each zone with a plurality of helium gas outlets provided in the upper end part of the base corresponding to the first area of the divided center part of the wafer, because this provides a better control of the areas to cool by allowing changes in the temperatures or density of the helium gas, even more allows the usage of different gases according to the needs on the different areas of the wafer in process.

Regarding claim 11 Johnson et al. in view of Lue et al. and Arasawa et al. discloses the ESC for a wafer according to claim 4. Johnson et al. in view of Lue et al. further discloses comprising: a third ring type sealing member provided on the upper end part of the base (Col. 12 lines 5-9 <multizone>), and which directly contacts and divides the center pad of the wafer into first and second areas when the wafer is mounted (Col. 8 lines 42-45), and a third helium gas supply passage provided inside the base and offset from the second helium gas supply passage (Figs. 1A element 180, 1B elements 180, 215 & 1D element 215), and which emits the helium gas to the first part of the divided center part of the wafer.

Regarding claim 12 Johnson et al. in view of Lue et al. and Arasawa et al. discloses the ESC for a wafer according to claim 4. Johnson et al. in view of Lue et al. further discloses wherein the third helium gas supply passage comprises: a third helium gas inlet provided in the bottom of the base (Figs. 1A element 180, 1B elements 180, 215 & 1D element 215); a plurality of third helium gas outlets provided in the upper end part of the base corresponding to the first area of the divided center pad of the wafer (Fig. 4F elements 305A); and a third inner conduit formed branched (Col. 16 lines 57-61) from the third helium gas inlet and offset from the second inner conduit, and connected to the plurality of the third helium gas outlets(Fig. 4F elements 305A).

Regarding claim 17 Johnson et al. discloses an electrostatic chuck (ESC) (Abstract & Fig. 1A element 102) for a wafer (Col. 1 lines 13-15), comprising: a body on

which the wafer is mountable by electrostatic force (Fig. 1I element 4), the body having first (Fig. 1I element 4<top>) and second (Fig. 1I element 4<bottom>) surfaces, oppositely disposed; division of the wafer into a plurality of predetermined areas (Col. 9 lines 26-42, Col. 12 lines 5-9, Col. 17 lines 45-50 & Fig. 1H <Johnson describes the possibility of having multiple zones of cooling and with different shapes and configurations) when the wafer is mounted on the body; a plurality of cooling gas outlets formed in the body and arranged in groups (Fig. 4F elements 305A, 305B), each cooling gas outlet emitting a cooling gas onto the wafer, wherein outlets in a respective group emit the cooling gas onto the wafer in a respective predetermined area of the wafer (Fig. 4F elements 305A<center area>, 305B<edge area>); a plurality of independent cooling gas inlets (Fig. 1A-B element 180 & Fig. 1D elements 210, 215), and a plurality of independent gas passages (Col. 9 lines 26-33 & Fig. 1H), each of which fluidly connects a respective cooling gas inlet with the cooling gas outlets in a group.

Johnson does neither specifically disclose the sealing elements as ring–type, which is in direct contact with the wafer and divides it after is mounted nor wherein the cooling gas is introduced into each predetermined area synchronously with the introduction of the cooling gas into at least one other of the predetermined areas.

Lue et al. teaches ring-type sealing member at the top of the base that contact the wafer and divides it when the wafer is mounted (Col. 6 lines 24-35, Col. 9 lines 11-20 & Fig 3 elements 72, 74, Fig. 4 elements 72, 74, 82).

Arasawa et al. teaches a plasma processing apparatus wherein the two gases are supplied at the same time at the two areas (Col. 9 lines 5-10 & Fig. 12 gases 64a-b provided to the wafer thru manifolds 62-63).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the Johnson et al. device with the Lue et al. teachings because these rings minimize leakage of helium gas into the chamber (Lue et al. <Col. 6 lines 34-35>) and further in view of Arasawa et al. because it provides and apparatus and method capable of making the temperature distribution uniform in the whole area of

the substrate to be processed and applying a more uniform and better process to it (Arasawa et al. <Col. 2 lines 3-7>).

Regarding claim 18 Johnson et al. in view of Lue et al. and Arasawa et al. discloses the ESC for a wafer according to claim 17. Johnson et al. further discloses wherein: each cooling gas inlet is positioned within central portion of the second surface (Fig. 1A elements 152, 170, 180 & Fig 1B elements 180, 210, 215); and each independent gas passage comprises: a first conduit (Col. 9 lines 26-33 & Fig. 1H) which fluidly connects the cooling gas outlets in a respective group, and a plurality of second conduits (Fig. 1B element 180) which fluidly connect the respective cooling gas inlet (Fig. 1B elements 210, 215) with the respective first conduit.

Regarding claim 19 Johnson et al. in view of Lue et al. and Arasawa et al. discloses the ESC for a wafer according to claim 17. Johnson et al. further discloses wherein: each cooling gas inlet is positioned within central portion of the second surface (Fig.1A & 1B elements 180, 210, 215) and each independent gas passage comprises a plurality of conduits (Col. 9 lines 26-33 & Fig. 1H) each of which fluidly connects the respective cooling gas inlet with a respective one of the group of cooling gas outlets (Fig.1A & 1B elements 180, 200, 205).
Since there is no any losses of the cooling gas in the device the gas that goes thru the inlet conduit, circulates thru the channels in the cooling plate and comes back thru outlet conduit.

Regarding claim 20 Johnson et al. in view of Lue et al. discloses a method (a person of the ordinary skill will understand a method that is intrinsically described by the functioning of the apparatus) of cooling a wafer (Col. 1 lines 13-16) in an electrostatic chuck (ESC) (Abstract & Fig. 1A element 102), the method comprising: providing a body on which the wafer is mountable by electrostatic force (Fig. 1I element 4), and

introducing a cooling gas into different predetermined areas independently (Fig. 1B <showing coolant inlet for at least two zones>).

Johnson et al. does neither specifically teach providing seals which directly contact and divide the wafer into plurality of predetermined areas when the wafer is mounted on the body nor wherein the cooling gas is introduced into each predetermined area synchronously with the introduction of the cooling gas into at least one other of the predetermined areas.

Lue et al. teaches ring-type sealing member at the top of the base that contact the wafer and divides it when the wafer is mounted (Col. 6 lines 24-35, Col. 9 lines 11-20 & Fig 3 elements 72, 74, Fig. 4 elements 72, 74, 82).

Arasawa et al. teaches a plasma processing apparatus wherein the two gases are supplied at the same time at the two areas (Col. 9 lines 5-10 & Fig. 12 gases 64a-b provided to the wafer thru manifolds 62-63).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the Johnson et al. device with the Lue et al. teachings because these rings minimize leakage of helium gas into the chamber (Lue et al. <Col. 6 lines 34-35>) and further in view of Arasawa et al. because it provides and apparatus and method capable of making the temperature distribution uniform in the whole area of the substrate to be processed and applying a more uniform and better process to it (Arasawa et al. <Col. 2 lines 3-7>).

Claims 3, 5-7, 10 & 13-16 are rejected under 35 U.S.C. §103(a) as being unpatentable over Johnson et al. (US 6740853) in view of Lue et al. (US 5761023), Arasawa et al. (US Re. 36810) and Kanno et al. (US 6677167).

Regarding claim 3 Johnson et al. in view of Lue et al. and Arasawa et al. discloses the ESC for a wafer according to claim 2. Johnson et al. further discloses wherein the first inner conduit comprises: a plurality of first branch conduits (Fig. 1B) connected to the first helium gas inlet (Figs. 1B, 1D element 210); and a first conduit

(Col. 9 26-42 & Fig. 1H <Johnson describes channels but does not specifically mention if they are circular>) connected to the plurality of the first branch conduits (Fig. 1B) and the plurality of the first helium gas outlets (Fig. 4F elements 305B) but does not specifically disclose a conduit being circular.

Kanno et al. teaches a circular conduit (Col. 9 lines 26-42 & Fig 18).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the Johnson et al. in view of Lue et al. and Arasawa et al. device with the Kanno et al. device features because the electrostatic chuck plates and in general the wafer has this shape as well, having a channel, groove or conduit in a circular shape help to distribute the cooling gases in an evenly way.

Regarding claim 5 Johnson et al. in view of Lue et al. and Arasawa et al. discloses the ESC for a wafer according to claim 4. Johnson et al. further discloses wherein the second inner conduit comprises: a plurality of second branch conduits (Fig. 1B) connected to the second helium gas inlet (Figs. 1B, 1D element 215), and a second conduit (Col. 9 26-42 & Fig. 1H <Johnson describes channels but does not specifically mention if they are circular>) connected to the plurality of the second branch conduits (Fig. 1B) and the plurality of the second helium gas outlets (Fig. 4F elements 305A) but does not specifically disclose a conduit being circular.

Kanno et al. teaches a circular conduit (Col. 9 lines 26-42 & Fig 18).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the Johnson et al. in view of Lue et al. and Arasawa et al. device with the Kanno et al. device features because the electrostatic chuck plates and in general the wafer has this shape as well, having a channel, groove or conduit in a circular shape help to distribute the cooling gases in an evenly way.

Regarding claim 6 Johnson et al. in view of Lue et al. and Arasawa et al. and Kanno et al. discloses the ESC for a wafer according to claim 3. Johnson et al. further discloses wherein the second helium gas supply passage comprises: a second helium

gas inlet provided in a bottom of the base (Figs. 1A element 180, 1B elements 180, 215 & 1D element 215); a plurality of second helium gas outlets provided in the upper end part of the base corresponding to the center pad of the wafer (Fig. 4F elements 305A); and a second inner conduit formed branched (Col. 16 lines 57-61) from the second helium gas inlet (Fig. 1D element 215), and connected to the plurality of the second helium gas outlets (Fig. 4F elements 305A).

Regarding claim 7 Johnson et al. in view of Lue et al. and Arasawa et al. and Kanno et al. discloses the ESC for a wafer according to claim 6. Johnson et al. further discloses wherein the second inner conduit comprises: a plurality of second branch conduits (Fig. 1B) connected to the second helium gas inlet (Figs. 1B, 1D element 215) and a second conduit (Col. 9 lines 26-42, Col. 12 lines 5-9 & Fig. 1H <Johnson describes the possibility of having multiple zones of cooling and with different shapes and configurations. Moreover, describes channels but does not specifically mention they are circular>) connected to the plurality of the second branch conduits (Fig. 1B) and the plurality of the second helium gas outlets (Fig. 4F elements 305A) but does not specifically disclose a conduit being circular.

Kanno et al. teaches a circular conduit (Col. 9 lines 26-42 & Fig 18).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the Johnson et al. in view of Lue et al. and Arasawa et al. device with the Kanno et al. device features because the electrostatic chuck plates and in general the wafer has a circular shape as well, for this having a channel, groove or conduit in a circular shape helps to distribute the cooling gases in an evenly way.

Regarding claim 10 Johnson et al. in view of Lue et al. and Arasawa et al. discloses the ESC for a wafer according to claim 9. Johnson et al. further discloses wherein the inner conduit comprises: a plurality of branch conduits (Fig. 1B) connected to the helium gas inlet, and a conduit (Col. 9 lines 26-42, Col. 12 lines 5-9 & Fig. 1H <Johnson describes the possibility of having multiple zones of cooling and with different

shapes and configurations. Moreover, describes channels but does not specifically mention if they are circular>) connected to the plurality of the branch conduits (Fig. 1B) and the plurality of the helium gas outlets (Fig. 4F elements 305A) but does not specifically disclose a conduit being circular.

Kanno et al. teaches a circular conduit (Col. 9 lines 26-42 & Fig 18).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the Johnson et al. in view of Lue et al. and Arasawa et al. device with the Kanno et al. device features because the electrostatic chuck plates and in general the wafer has a circular shape as well, for this having a channel, groove or conduit in a circular shape helps to distribute the cooling gases in an evenly way.

Regarding claim 13 Johnson et al. in view of Lue et al. and Arasawa et al. discloses the ESC for a wafer according to claim 12. Johnson et al. further discloses wherein the third inner conduit comprises: a plurality of third branch conduits (Fig. 1B) connected to the third helium gas inlet; and a third conduit (Col. 9 lines 26-42, Col. 12 lines 5-9 & Fig. 1H) connected to the plurality of the third branch conduits (Fig. 1B) and the plurality of the third helium gas outlets (Fig. 4F elements 305A). Johnson further describes the possibility of having multiple zones of cooling and with different shapes and configurations.

Johnson et al. in view of Lue et al. does not disclose the conduits being circular.

Kanno et al. teaches a circular conduit (Col. 9 lines 26-42 & Fig 18).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the Johnson et al. in view of Lue et al. and Arasawa et al. device with the Kanno et al. device features because the electrostatic chuck plates an in general the wafer has a circular shape as well, for this having a channel, groove or conduit in a circular shape helps to distribute the cooling gases in an evenly way.

Regarding claim 14 Johnson et al. in view of Lue et al. and Arasawa et al. discloses the ESC for a wafer according to claim 6. Johnson et al. further discloses

comprising: a third ring type sealing member provided on the upper end part of the base (Col. 12 lines 5-9 <multizone>), and which directly contacts and divides the center part of the wafer into first and second areas when the wafer is mounted (Col. 8 lines 42-45), and a third helium gas supply passage (Figs. 1A element 180, 1B elements 180, 215 & 1D element 215) provided inside the base and offset from the second helium gas supply passage, and which emits the helium gas to the first area of the divided center part of the wafer but does not specifically disclose a third ring-type sealing, but Johnson et al. teaches about having multizones with different shapes and configurations and a third helium gas supply passage at the center of conduit 180.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the Johnson et al. in view of Lue et al., Arasawa et al. and Kanno et al. device with the features of having three concentric rings with separated gas inlets for each zone, this provides a better control of the areas to cool by allowing changes in the temperatures or density of the helium gas, even more allows the usage of different gases according to the needs on the different areas of the wafer in process.

Regarding claim 15 Johnson et al. in view of Lue et al. and Arasawa et al. discloses the ESC for a wafer according to claim 14. Johnson et al. further discloses wherein the third helium gas supply passage comprises: a third helium gas inlet provided in the bottom of the base (Figs. 1A element 180, 1B elements 180, 215 & 1D element 215); a plurality of third helium gas outlets provided in the upper end part of the base corresponding to the first area of the divided center part (Fig. 4F elements 305A); and a third inner conduit formed branched (Col. 16 lines 57-61) from the third helium gas inlet and offset from the second inner conduit, and connected to the plurality of the third helium gas outlets (Fig. 4F elements 305A) but does not specifically disclose a third helium gas supply passage, but teaches about having it in the center of conduit 180. Johnson et al. does not specifically disclose a plurality of helium gas outlets provided in the upper end part of the base corresponding to the first area of the divided

center part of the wafer; and an inner conduit formed branched from the helium gas inlet and connected to the plurality of the helium gas outlets but teaches about having multizones with different shapes and configurations.

Regarding claim 16 Johnson et al. in view of Lue et al. and Arasawa et al. discloses the ESC for a wafer according to claim 15. Johnson et al. further discloses, wherein the third inner conduit comprises: a plurality of third branch conduits (Fig. 1B) connected to the third helium gas inlet; and a third conduit (Col. 9 lines 26-42, Col. 12 lines 5-9 & Fig. 1H <Johnson describes the possibility of having multiple zones of cooling and with different shapes and configurations. Moreover, describes channels but does not specifically mention if they are circular>) connected to the plurality of the third branch conduits (Fig. 1B) and the plurality of the third helium gas outlets (Fig. 4F elements 305A) but does not specifically disclose a third ring-type sealing but Johnson et al. teaches about having multizones with different shapes and configurations. The references does not specifically disclose the functioning a third gas inlet but Johnson et al. teaches about having it in the center of conduit 180. The references does not disclose a conduit being circular.

Kanno et al. teaches a circular conduit (Col. 9 lines 26-42 & Fig 18).

Response to Arguments

Regarding claims 1-16 the examiner introduced Arasawa et al.'810 for the limitation of helium gas synchronously provided to different areas of the wafer.

Applicant's arguments with respect to claims 17-20 have been fully considered but they are not persuasive.

In response to applicant's arguments against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir.

1986). The examiner notes that the applicant attacks partial combination, not the complete combination by for example saying:

Jonhson et al.'853 and Lue et al.'023 does not disclose provision of helium gas synchronously; that's because the combination needs Arasawa et al. to be complete.

Jonhson et al.'853 and Aarasawa et al.'810 does not disclose sealing members to separate different zones in the wafer; that's because even Jonhson et al.'853 teaches multizones and with the provision of first and second helium gases is silent about the understood sealing between zones; as a result the examiner introduced Lue et al.'023 for the teaching of ring-type sealant between zones.

In response to applicant's argument that there is no suggestion to combine the references, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See In re Fine, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and In re Jones, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir.1992). In this office action, the combination of Johnson et al.'853, Lue et al.'023 and Arasawa et al.'810 is based on that it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the Johnson et al. device with the Lue et al. teachings because these rings minimize leakage of helium gas into the chamber (Lue et al. <Col. 6 lines 34-35>) and in addition also prevents any leakage among the different zones further in view of Arasawa et al. because it provides and apparatus and method capable of making the temperature distribution uniform in the whole area of the substrate to be processed and applying a more uniform and better process to it (Arasawa et al. <Col. 2 lines 3-7>). See also, KSR International Co. vs. Teleflex, Inc., No 04-1350 (U.S. April 30, 2007). As a reminder the examiner have been previously provided a thorough explanation of the combination at the Advisory Action mailed out on 11/01/07, which applies into this office action as well.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Luis E. Román whose telephone number is (571) 272-5527. The examiner can normally be reached on Mon – Fri from 7:15 AM to 3:45 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Sherry can be reached on (571) 272-2084. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

Information regarding the status of an application may be obtained from Patent Application Information Retrieval (PAIR) system.

Status information for unpublished applications is available through private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the private PAIR system, contact the Electronic Business Center (EBC) at (866) 217-9197 (toll-free).

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LR/01/08/08

1/15/08

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